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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics

THE AGRICULTURAL OUTLOOK AND BUSINESS ACTIVITY, 1927-1928

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AGRICULTURAL ECONOMICS

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A discussion of the agricultural outlook in its relation to business conditions in 1927-28 calls primarily for an analysis of the probable money income which the agricultural industry will be able to contribute as a part of the national buying power. It also calls, in my mind, for a comparison between the current phase of the business cycle and of the agricultural price cycle; for, it may be said at the outset, there are agricultural price cycles just as there are business cycles, and furthermore, there appears to be an important relationship between them of a causal or coincidental nature which is not usually observed in current analyses of the business situation.

First then, will agriculture next season have more or less money to spend than it had during the present season? Those of you who have followed the agricultural outlook report for 1927, issued by the Bureau of Agricultural Economics of the United States Department of Agriculture, undoubtedly have in mind the conclusion reached therein, namely that "the contribution of agriculture during 1927-28 to the national buying power promises at best to be no greater than that of the present season and it may very likely be somewhat less." Although this conclusion was stated four months ago, the outlook has not changed materially since then.

When the present farm marketing season is over, by the end of June, it will undoubtedly be found that the money income of farmers taken as a whole will be less by at least five per cent than the income during the preceding year of 1925-26, the year of maximum income since 1921. This year's decline came as a result of lower prices of cotton and grains which were not offset by the increased production.

The conclusion as to the outlook for the coming year can readily be substantiated by reference to the important factors in the major lines of agricultural production.

In the outstanding case of cotton, almost any action on the part of the growers to decrease acreage is not likely to increase the money income from the entire crop above the reduced income of this season. Taking the various indications into account, it is probable that there will be a ten per cent reduction in acreage, with some reduction in yield. Based on past relationships between prices, production and carry over, the maximum income to growers next season would result if production were not in excess of 11,000,000 bales. Even in that event the returns to growers would not exceed this year's low returns, for a large carry over promises to prevent a rise in prices equivalent to the reduction in output.

The wheat growers are faced with the prospect that the world carry over of old wheat at the end of the year will be somewhat larger than last year and that there will be some increase in area to be harvested in 1927. In this country the area seeded to winter wheat this year is five per cent greater than that of 1924 or 1925, and the indications are that less of the sown area will be abandoned this year. Growing conditions so far are reported good to excellent. Furthermore, spring wheat growers, also, intend to increase their plantings. These factors are reflected in the present low level of wheat prices, and promise no increase in income from wheat marketings next fall over this season's returns, unless a Canadian crop failure or some other unforeseen event takes place.

The outlook for corn is complicated by supplies in excess of feeding requirements and by the prospect of increased production in the South. The present very low prices of corn and relatively high prices of hogs would normally warrant the expectation of higher corn prices next winter as a result of decreased production and increased feeding demand. The corn belt, possibly in an effort on the part of some farmers not to endanger the present level of hog prices, is intending to reduce corn acreage, though only moderately, but the cotton belt is planting considerably greater acreage in corn. Low corn prices may therefore continue to prevail unless hog production next fall and winter is increased enough so that a greater demand will offset the probable increase in corn production. Income from cash corn is therefore not likely to be materially different from what it was this year.

A similar conclusion holds for cash income from oats. A moderate increase in acreage is intended in the North Central States, and a considerable increase in the South. With a declining market for oats, due to the reduced number of horses in cities and on farms, those who raise oats for sale can hardly look forward to returns greater than during the present season.

From the fruit and vegetable crops, particularly apples and potatoes, income next year is not likely to exceed this year's income. Should a smaller crop of apples be produced, the higher prices will about offset the lower volume of sales, making no material change in income -- possibly somewhat higher, If present intentions to increase the potato acreage are carried out, and a larger crop produced, income among potato growers is quite likely to be reduced, since a larger crop tends to have a smaller value.

The outlook for income from livestock and livestock products appears to be somewhat more optimistic. The chances are somewhat better than in the case of crops that this season's income will be maintained, although the situation is not without its weaknesses. The hog situation continues favorable, largely because hog producers during the past year do not appear to have taken full advantage of the low feed prices. The maintenance of that favorable situation is therefore contingent on the ability of farmers to resist the temptation to feed more hogs because prices are relatively high and avoid overproduction next year, a temptation which has more often been yielded to than resisted. For cattle producers the outlook is definitely brighter than for hog producers, since prices will probably continue their upward swing in the price cycle. But inasmuch as this rise will be the result of a smaller volume of marketings, the rise in prices will hardly mean a comparable increase in income.

The dairy and poultry situation is in a large measure comparable with that of hogs; prices are relatively high and feed prices are low. The continuation of the favorable position of the dairy and poultry sections of the agricultural industry depends largely on the avoidance of overproduction. Recent marketings of eggs in excess of last year's marketings and greater supplies of live poultry indicate that prospective overproduction is here not an impossibility. Unless an increased urban and foreign demand should develop to prevent the usual effect of increased production on prices, it is quite certain that producers of poultry and poultry products will do well if they maintain their income of the present season.

Such in brief are the none too optimistic factors in the farm income situation for 1927-28.

The conclusion that agriculture as a whole may not have more money for spending next season is not in itself an indication of the effect of the agricultural outlook on the various lines of business activity. In so far as the maintenance of last year's farm income, or its further moderate recession will be the result of increased output, business activity as usually defined may be favorably affected. Railroads would have a larger volume of outbound agricultural traffic, processors and handlers of farm products would have a larger physical volume of business, and industries where farm products form their raw materials would be sustained by the lower agricultural prices. The opposite effect on certain lines of business is to

be expected where higher prices are accompanied by lower farm production. For those industries which depend on the farm market as an outlet for their goods, such as the automobile and farm machinery manufacturers, and mail order houses, the effect of no material change in farm income will depend on their ability to divert the farmers' purchases from one commodity to another or to sell them more goods on installment. Thus changes in agricultural prices, production and income do not affect all industries alike.

From our preliminary and tentative studies of the cyclical movements of agricultural prices (in relation either to the general commodity price level, or to the level of non-agricultural prices) it appears to us that relatively <u>high</u> or <u>low</u> agricultural prices do not always bring respectively, industrial <u>prosperity</u> or <u>depression</u>. In fact our preliminary observations are that relatively high agricultural prices appear to have been unfavorable signs for continued industrial prosperity and that relatively low agricultural prices have apparently been accompanied by expansion in industrial activity or by the continuation of a period of industrial prosperity.

A brief review of the course of business cycles and of crop price cycles in the United States since 1875 will illustrate the basis for these observations (see chart). In this comparison we have used the index of general business activity of the American Telephone and Telegraph Company annually from 1877 to 1922 and from 1922 to date, the Harvard index of trade. The original monthly indexes have been averaged to represent the state of business during the year from July through June. The index of crop prices was obtained by (1) weighting the December 1 prices of 10 crops by pre-war average production, (2) deflating the resulting index by an index of non-agricultural prices, (3) adjusting for secular trend in the ratios of crops to non-agricultural prices and finally (4) taking a two-year average. Thus, for the year 1891, the index of business relates to the crop year 1885-86, while the adjusted index of crop prices relates to the prices prevailing in the harvest seasons of 1885 and 1884.

At first glance it would appear that the index of business tends to forecast the cycles in crop prices by one to three years, but as will be pointed out later this does not appear to be logical. For the present it is to be observed that during the past 50 years major periods of industrial prosperity culminated in periods of relatively high crop prices. This was the case in the years (beginning in July) of 1881 and 1882, 1891 and 1892, 1901 and 1902, possibly 1911 and 1912, and 1918 and 1919. On the other hand, periods of sustained industrial recovery have come in periods of relatively low crop prices as, for instance, the recoveries following 1878-79, 1884-85, 1897-98, 1914-15 and 1921-22. The recoveries following 1904-05 and 1908-09 appear to be exceptions, but even in the first of these two instances the recovery in industrial activity was associated with declining crop prices.

It may be argued from the facts present here that periods of industrial prosperity tend to produce relatively high crop prices in subsequent years, but this is not tenable. The cycles in crop prices are the direct result of fluctuations in crop production. The high degree of correlation between the fluctuations in the index of production of 10 crops 1/

1/ Production of 10 crops based on revised production estimates, weighted by 43 year averaged December 1 prices, expressed as ratios to an 11-year moving average.

and the adjusted index of prices of the same 10 crops 2/ as indicated

2/ December 1 prices of 10 crops, weighted by pre-war average production deflated by a two year average index of non-agricultural prices, and expressed as ratios to an 11-year moving average.

in the lower half of the accompanying chart, leaves very little doubt that the chief explanation of the cyclical fluctuations in crop prices is to be found in the fluctuations of crop production and not in business cycles. This suggests a tentative conclusion that abundant crops at low prices supply a large portion of the raw products for industry and trade, the transportation and consumption of which form a large part of our current measures of the state of business activity. This is particularly true of the index of business used here. It is heavily weighted by cotton consumption, activity of wool machinery, by freight car loadings, and net ton miles of freight which are more or less influenced by the volume of crop production. For a striking demonstration of the stimulus that large low-priced crops give to business activity, we need only refer to the present high rate of cotton mill activity which rests almost entirely on the record cotton crop consumed at very low prices. Other conclusions suggested by this comparison between crop prices and business activity are that relatively high agricultural prices are evidences of relatively high raw material costs which accompany the final stages of a period of prosperity, and that in periods of relatively low crop prices, low food prices paid by consumers make available a relatively larger buying power for the products of industry. It has been pointed out by some economists that the purchases of automobiles by consumers during the past five years have been made possible in part at least at the expense of low prices of food products.

Before applying these observations to the agricultural outlook for 1927-28 in relation to business activity, it may be of interest to raise a few general questions. (1) Since crop prices reflect crop production, is it not possible to show directly, rather than through prices, the effect of farm production on business activity? (2) Would a more inclusive index of farm product prices (including livestock and livestock products) when compared with a more comprehensive index of national business activity disclose the relationships presented here? The answers to both of these questions

as indicated by our studies so far are in the affirmative, more definitely so for the second question. (3) What is the relationship between farm income, as distinguished from farm production, and business activity? Does it follow from the data presented that relatively high agricultural prices mean low money incomes and vice versa? This question cannot be answered at present because data on farm income for any considerable period of time are not available. Inasmuch as some crops tend to have greater values when small, such as cotton and potatoes, and other greater values when large, it is not unlikely that periods of relatively high prices mean higher incomes in certain crop areas and lower incomes in others and that periods of low agricultural prices may also mean higher incomes in one region and lower in another, with corresponding effects on industries engaged in distribution to farmers. It is not inconceivable furthermore that the effect of income from large or small crops on business may be different from the effect of income from large or small production of livestock and livestock products. (4) What is the relative importance of the physical volume of agricultural production in relation to the total volume of trade, as compared with the importance of agricultural buying power in the national market for industrial products? It would not be surprising to find that agricultural production is a greater factor in the volume of trade as usually measured than is the money income of farmers in the total buying power of the country. (5) What is the relation of our observations as to crop prices and business activity to that theory of business cycle in which crop production is given the important place of a generating force? To answer this and many other questions considerably more light is needed than that available from our meager data and preliminary investigations. The possible interrelationships between agriculture and industrial activity are so diverse that we need not only additional data on agricultural production, prices and income, but also additional measures of business under special groupings. We need indexes of agricultural production which will compare with indexes of activity of those industries which process or handle agricultural products. We need also measures of farm income to be compared with the volume of business of industries which depend on the farm market for their outlet. Until such measures are developed and such comparisons made available, it will not be possible to assign to agricultural production prices and income their separate places and functions in the many sided interrelationships between agriculture and industrial activity.

Having dealt largely with crop prices and business activity, we may conclude with the question, does the agricultural outlook for 1927-28 indicate relatively high or low crop prices? This answer is one that must rest both on probable fact and on judgment. "Relatively high or low prices," as shown in the accompanying chart, depend on the direction of the secular trend adjustment. The use of a straight line upward trend through the post-war period would indicate relatively low prices for the past few years, but

if a downward trend is assumed since the war, (11 year moving average, projected), prices appear to be neither relatively low or high. 1/ Nor are

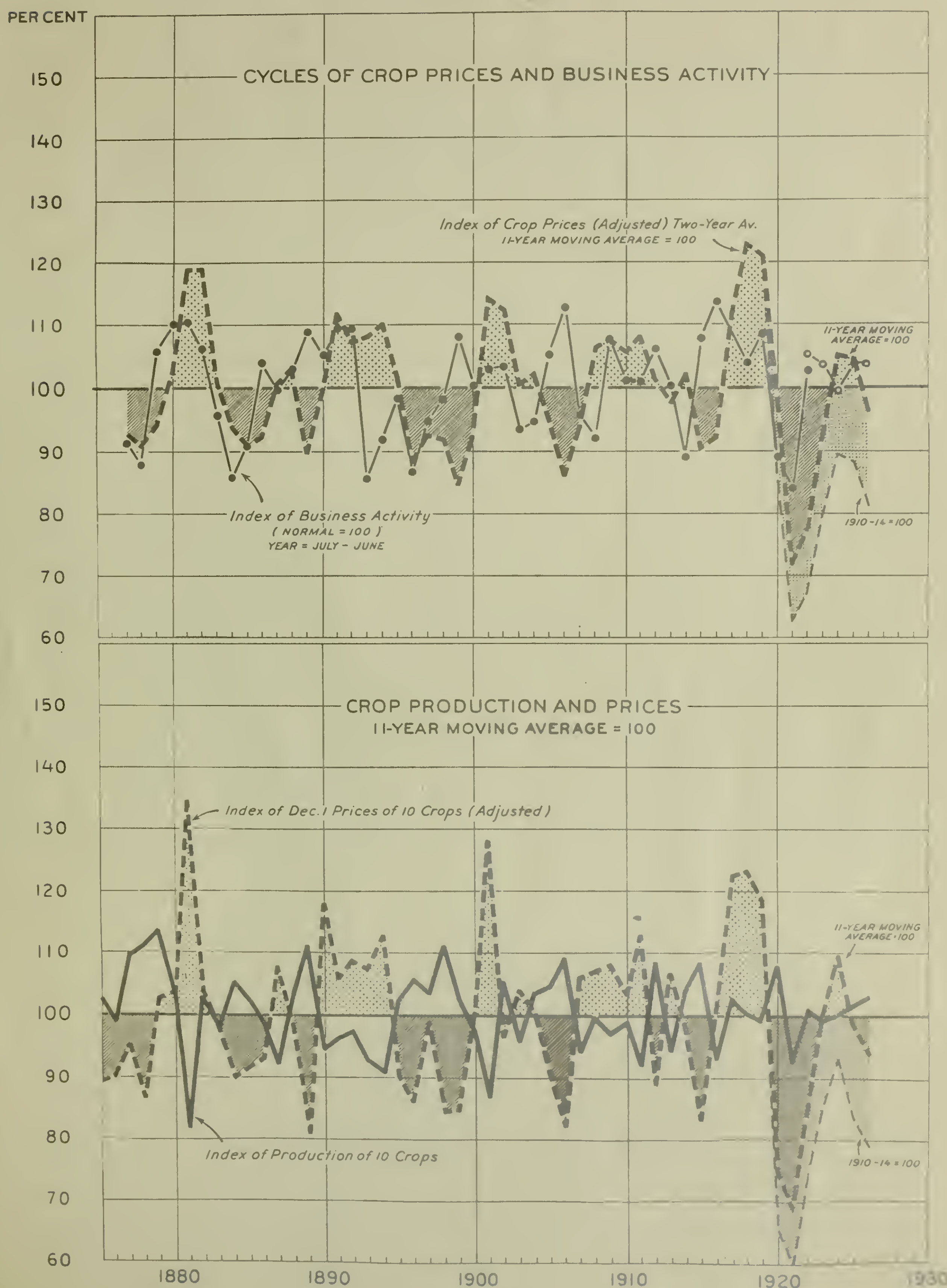
1/ In the accompanying chart two price areas are shown since 1920; one resulting from the use of an eleven year moving average trend projected downward since 1920; the other resulting from the use of a horizontal trend based on 1910-14 relationships.

they likely to be in a materially different position next season. The higher cotton prices which may prevail next December as compared with prices last December will be partly offset by lower prices of potatoes, but the net advance in the composite index of crop prices would have to be considerable -- which is not likely -- before it would justify the conclusion that crop prices in 1927-28 will be relatively high.

In judging the probable phase of the business cycle in 1927-28, it is worth observing that business activity appears to have been above normal for the past five years, and that in preceding periods of prosperity, business activity as measured by the index in the accompanying chart has remained above normal, once for a period of two years, twice for a period of four years, twice for a period of five years, and once for a period of seven years (1886-92).

Other factors, in addition to agricultural prices, production and income, will of course help to determine the course of business in the immediate future, but so far as the probable effect of crop prices alone is concerned, it is not likely to be an immediate deterrent factor in the lines of business represented by the index under discussion. In other words, crop prices promise to be sufficiently unfavorable to farmers, and thus promise to reflect conditions of farm production and industrial costs favorable toward maintaining industrial activity in the immediate future.

# CROP PRODUCTION, CROP PRICES, AND BUSINESS ACTIVITY



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